Distributed Mission Training

Overview for the DMT IPT

Maj Tom Karika
HQ USAF/XOCA

February 1996

"I am convinced modeling and simulation technologies available today will enable us to significantly change the way we train in the future. …… As a result, I have asked AF/XO to lead an effort to ensure we meet our future training needs."

General Ron Fogleman, CSAF

Joint Vision 2010

The Chairman of the Joint Chiefs of Staff in Joint Vision 2010 describes the need to train for emerging conflict scenarios:

"Simulations must be interconnected globally—creating a near-real-time interactive simulation superhighway between our forces in every theater. Each CINC must be able to tap into this global network and connect forces worldwide that would be available for theater operations. This network will allow selected units in CONUS to train with forces located in an overseas theater without actually deploying there." (Page 30)

Who's Been Briefed?

Air Staff

- CSAF (Gen Fogleman)
- CV (Gen Moorman)
- CVA (Lt Gen Vesely)
- SAF/AQ (Mr Money)
- SAF/IG (Lt Gen Swope)
- TE (Mr Manclark)
- FMBO
- XO
- XOC
- XOO
- XOR
- XOP
- XOI
- XOW
- DPP
- XPP
- ILX

MAJCOM

- HQ ACC/CC/DO/DR/SC/XP
- HQ AMC/CC/CV/DO
- HQ AETC/CC/CV/DO/XP
- HQ USAFE/DO/WPC
- HQ PACAF/DO
- HQ AFSOC/CC/DO
- HQ AFSPC/DO
- HQ AFMC/CV
- AFOTEC/CC
- ASC/CC
- HQ AIA/DO
- HQ AC2A/CC
- HQ AFAMS/CC
- HQ AFSAA/CC
- 10AF/CC (AFRES)
- AFRC/REO
- ANG/CC/CV

Army/Navy/OSD/Joint Sta

- Deputy N88 (Dr Zeman)/N889
- AMSO, Deputy Director
- DMSO, Director
- JSF JPO, Director (BG Kenne)
- OSD(Readiness & Training)
- OSD (PA&E)-Tac Air Div
- DARPA, Director/ITO
- DARPA/DISA JPO
- Training Functional Working Gr

The Challenge to Revolutionize Training

- Overcome Training Constraints:
  - Few Joint training opportunities
  - Dwindling exercise $$
  - Flying time issues
  - Classified capabilities
  - Safety
  - High PERSTEMPO, OPTEMPO
  - Airspace availability
  - Restricted weapons/EW envelope
  - Environmental concerns
  - Complex rules of engagement

***What we really need*:**

- **High Fidelity Virtual Battlespace**
- **Full Sensor & C2 Representation**
- **Composite Force Operations**
- **Mission rehearsal**

June 1997

Decision Brief to CSAF

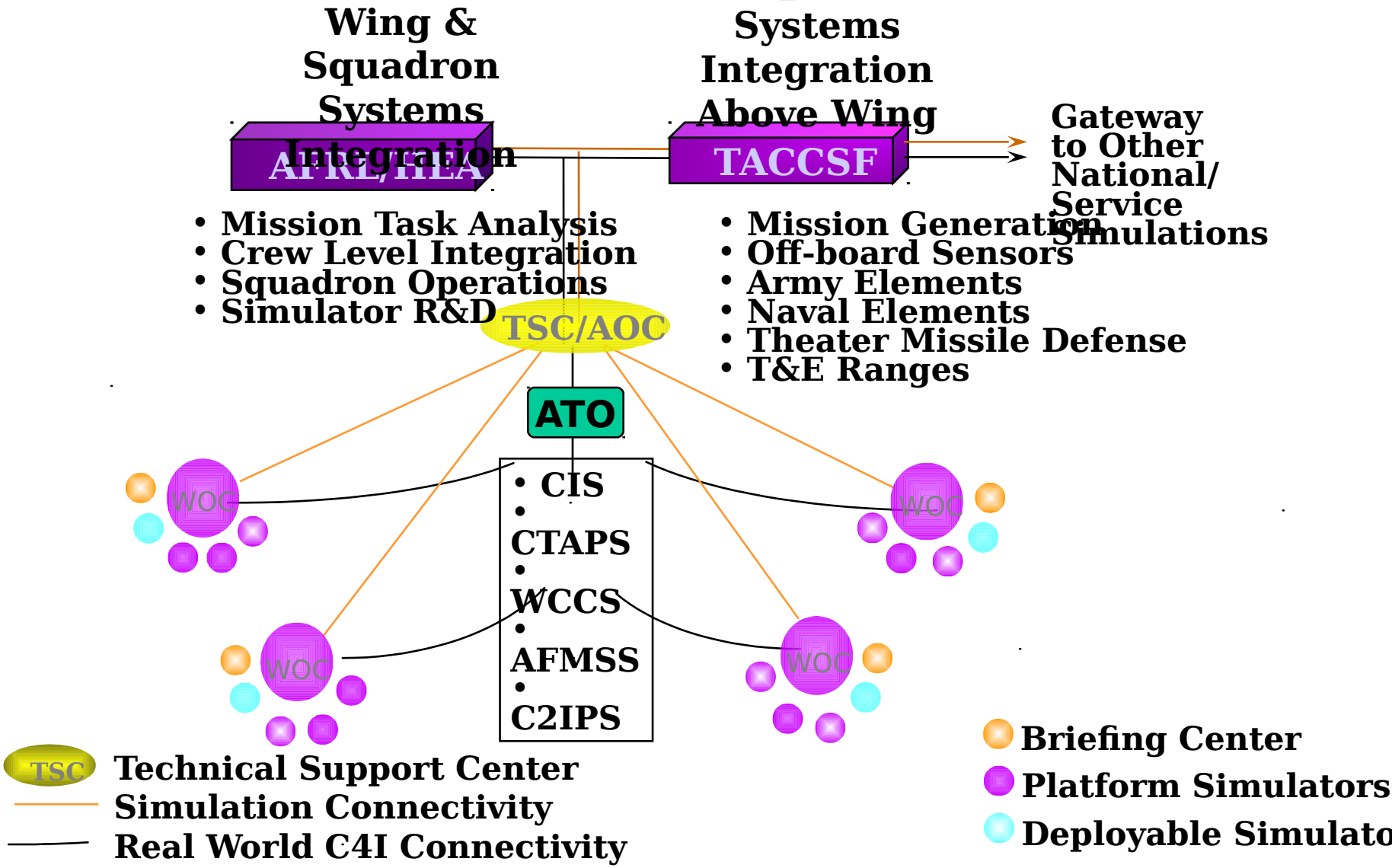
Decision

- Endorse Concept
- AF/XO plans to:
  - *Deliver integrated MTS roadmap 1 Aug 97*
  - *Prepare FY99 APOM and FY00 POM submissions*
- Leverage other efforts
  - *AF: F-22, B-2, C-17, etc.*
  - *Army: Combined Arms Tactical Trainer*
  - *Navy: Air Combat Environment T&E Facility*
  - *DARPA: Synthetic Theater of War*
  - *OSD: Embedded Training, High Level Architecture*
  - *Joint: Joint Advanced Distributed Simulation, JSF*

Approved: _____

Ronald R. Fogleman, General, USAF

CSAF Endorsed Concept



October 1997

Decision Brief to AFROC

Action

- **Establish a multi-MAJCOM and Air Staff DMT IPT**
  - Eliminate redundancy
  - Insure interoperability
- **Initiate an AF Capstone Requirements Document (CRD)**
  - Provide an integrated Air Force-wide process for the revolution
  - Establish a common foundation for MAJCOM DMT programs
  - Transition from consensus building to implementation
- **POM AF Wide Common Core Requirements**
  - Validate cost and benefits of DMT
  - Eliminate duplication -- Fill in "holes" -- Accelerate critical technologies
  - Establish validated common synthetic training environment

AFROC Decision:
AF DMT Program Definition

Warfighter Training
MAA / MNA

DMT MNS

Capstone Requirements Document

Policy Guidance

Tactics
Doctrine
AFI

Battlestaff Training MAA/MNA

NASM MNS

NASM ORD

SAF/AQ Accelerated Acquisition Initiative

TFI ORD

ACC DMT ORD

AMC DMT ORD

AETC DMT ORD

Other DMT ORD

Ops & Integration Contract

AF-Wide Common Core Req'ts

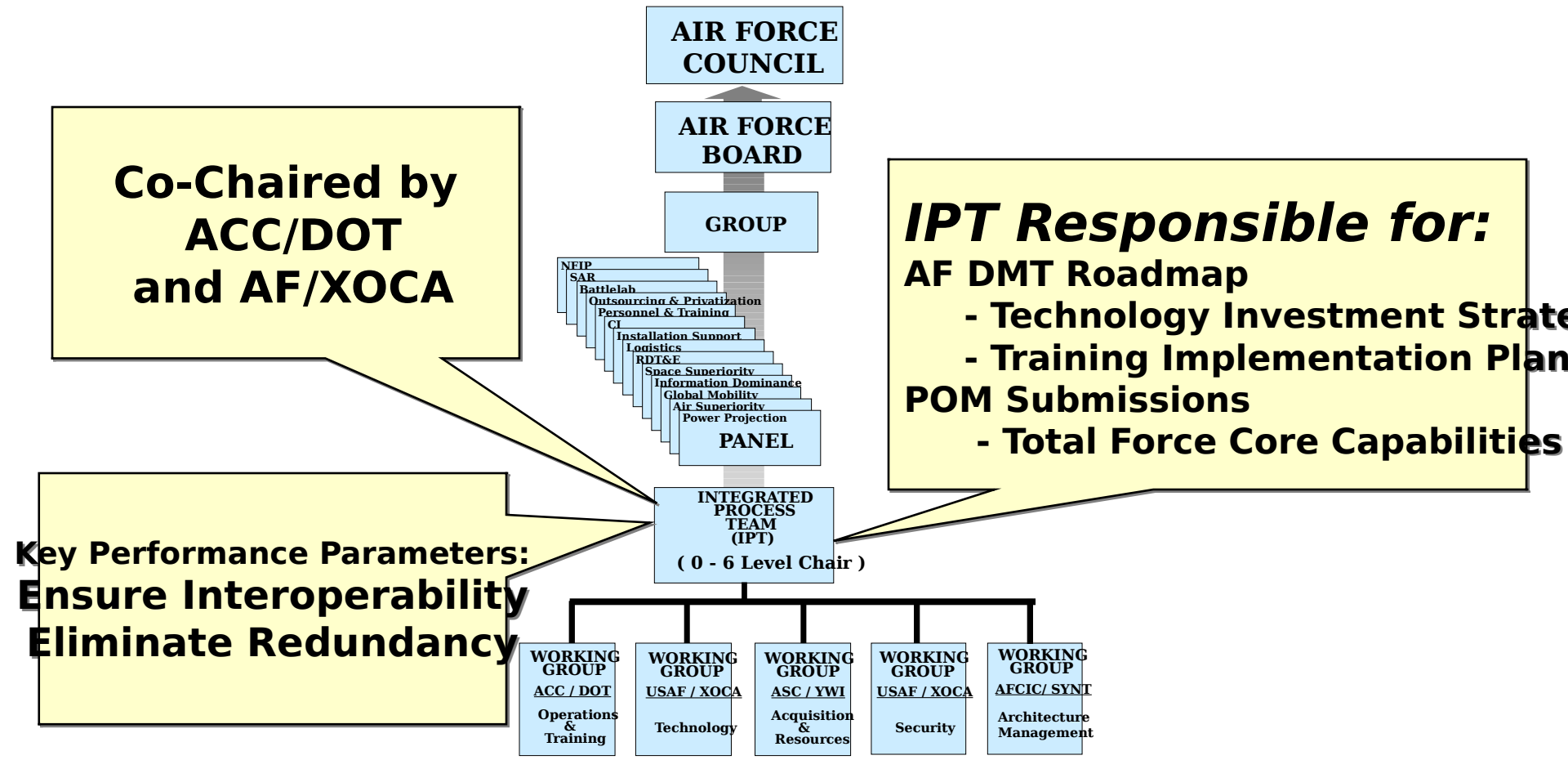
ACC Unique Req'ts

AMC Unique Req'ts

AETC Unique Req'ts

Other Unique Req'ts

AFROC Decision:
AF DMT Integrated Process Team

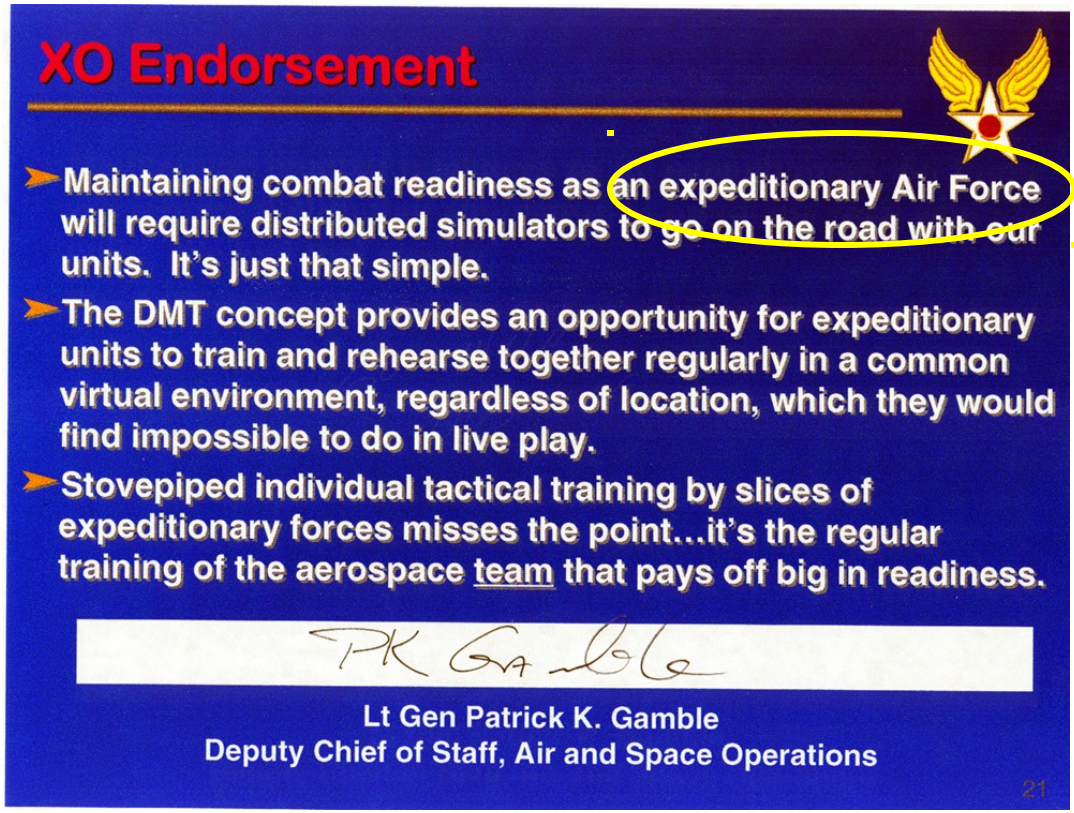


ACC DMT Deployment Schedule

Platform	FY99	FY00	FY01	FY02	FY03	FY04	FY05	FY06	FY07
F-15A/C	**Eglin *** **Langley ***		Mt Home Portland	Lakenheath Kadena Nellis New Orleans St Louis	Elmendorf Hickam Jacksonville Otis				
E-3			**Tinker*** Tyndall	Elmendorf Kadena Tyndall (x4)	Tinker (x2) Tyndall	Tinker (transportable)			
F-16 Blk 50			**Shaw***	Mt Home Nellis	Misawa Spangdahlem				
RQ-1			**Nellis***						
B-1				Dyess	Ellsworth	McConnell Mt Home	Robins		
E-8				Robins					
F-15E					Lakenheath Seymour J	Elmendorf Mt Home	Nellis		
F-16 Blk 30					Cannon	Sioux City, IA Springfield, OH	Buckley Carswell Dannelly, AL Hancock, NY Hill Kunson Richmond, VA	Capital, IL Homestead Hulman, IN Luke Selfridge, MI Truax, WI	Andrews, MD Joe Foss, SD
RC-135					Offutt				
A-10						Davis-Monthan	Pope	Eielson Osan Spangdahlem	Barnes, MA Boise, ID
B-2						Whiteman			
F-16 Blk 40						Hill Luke Nellis	Aviano Eielson Kunsan Moody Osan	Des Moines, IA Luke Toledo, OH	Kirtland Tulsa, OK
B-52							Barksdale	Minot	
EC-130 (Compass Call)							Davis-Monthan		
F-22							2 Sites		2 Sites
F-117								Holloman	
ABL								1 Site TBD	

March 1998

POM Support Brief to AF/XO


XO Endorsement
Maintaining combat readiness as an expeditionary Air Force will require distributed simulators to go on the road with our units. It's just that simple.
The DMT concept provides an opportunity for expeditionary units to train and rehearse together regularly in a common virtual environment, regardless of location, which they would find impossible to do in live play.
Stovepiped individual tactical training by slices of expeditionary forces misses the point...it's the regular training of the aerospace team that pays off big in readiness.
Lt Gen Patrick K. Gamble
Deputy Chief of Staff, Air and Space Operations
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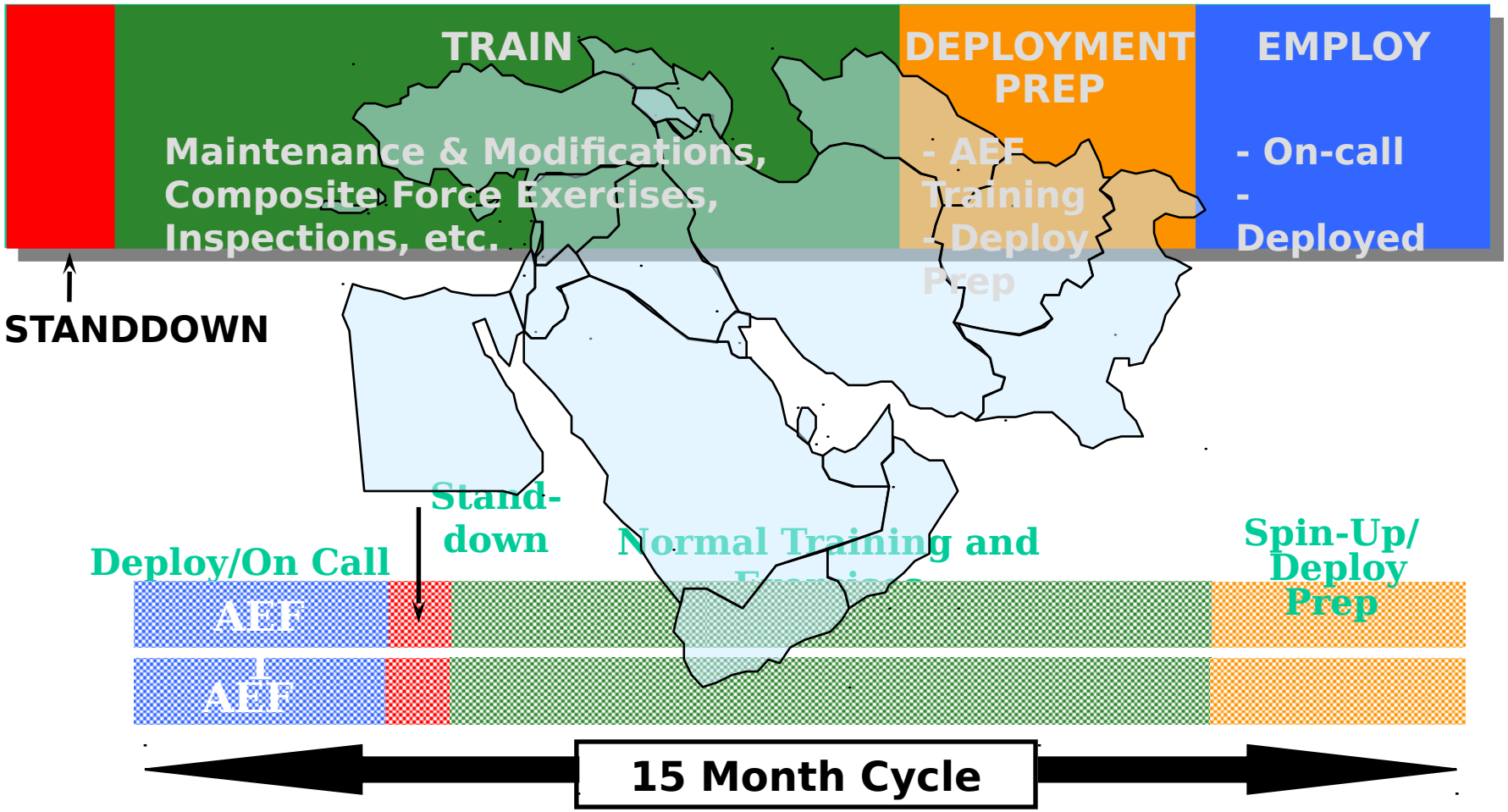
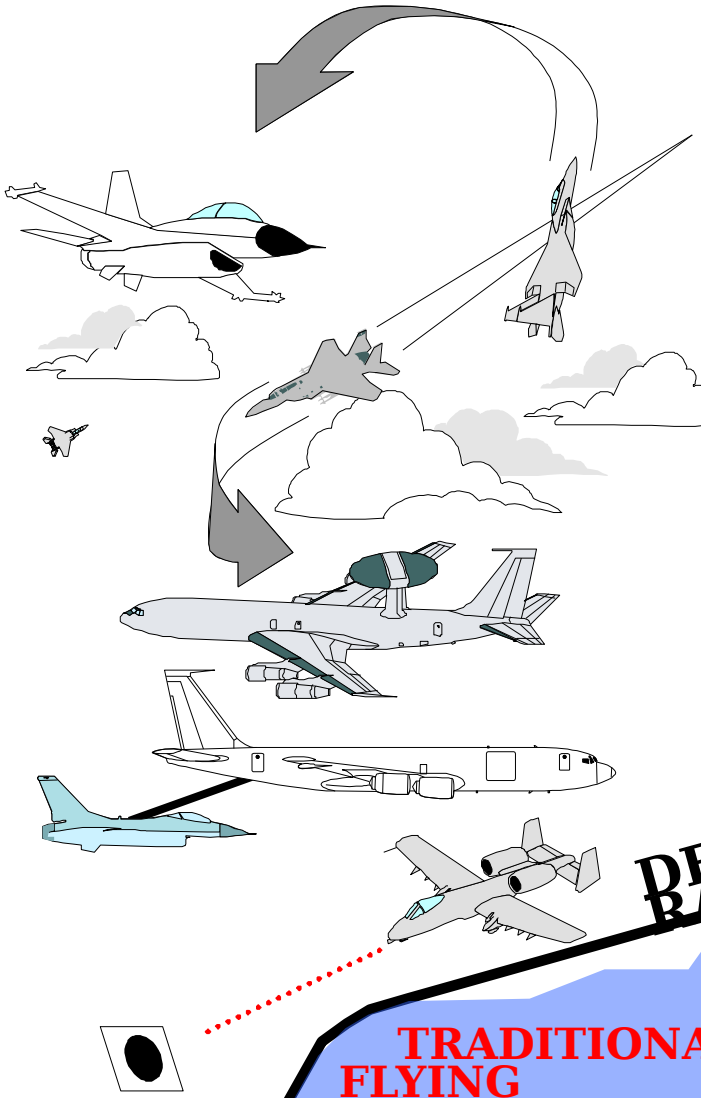
New DMT Challenge: Support AEF Preparation Cycle



SHORTFALLS IN FLYING TRAINING



- OUR CAPABILITY TO TRAIN THROUGH FLYING HAS A SOLID FOUNDATION:
  - -- FINELY HONED BY YEARS OF EXPERIENCE
  - -- WELL KNOWN COMMODITY

- SOME TRAINING CAN'T BE DONE IN SIMULATORS

- SOME TRAINING CAN'T BE DONE IN PEACETIME FLYING
  - -- FLIGHT IN ENEMY TERRITORY: BORDER CROSSING & COMBAT OPERATIONS
  - -- PRACTICE USING CLASSIFIED ELECTRONIC EMISSION
  - -- ACTUAL ENEMY FIGHTERS, SAMS, AAA, RADAR, &
  - -- KILL & BE KILLED -- KILL REMOVAL
  - -- MISSION REHEARSAL
  - -- THEATER SPECIFIC WEATHER
  - -- FREQUENT LARGE PACKAGE PRACTICE

CANNOT ACHIEVE IN PEACETIME FLYING

DESIRED AEF READINESS RAMP UP (SINGLE UNIT)

RED FLAG

ORI

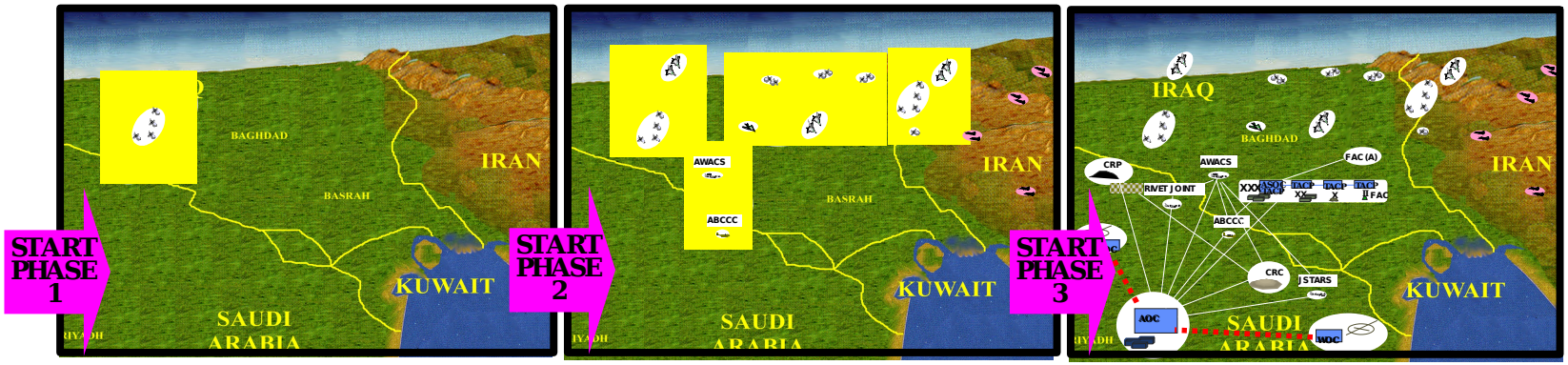
DEPLOY

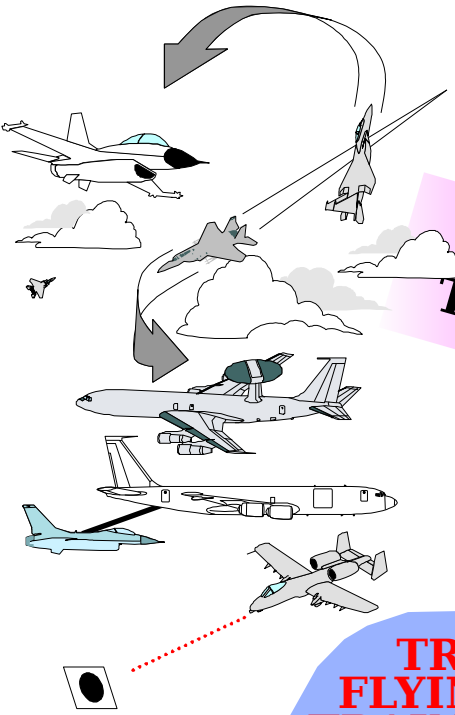
TRADITIONAL FLYING TRAINING PROGRAM

COMBINED COMBINED COMBINED COMBINED COMBINED COMBINED

JAN FEB MAR APR MAY

FULL AEF MISSION READINESS TRAINI





FLYING TRAINING

DMT TRAINING

CUMULATIVE EFFECT OF FLYING AND DMT TRAI

DMT "FILLS" THE HOLE IN AEF MISSION READINESS

TRADITIONAL FLYING TRAINING PROGRAM

DMT MISSION TRAINING

COMBINED

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DEPLOY

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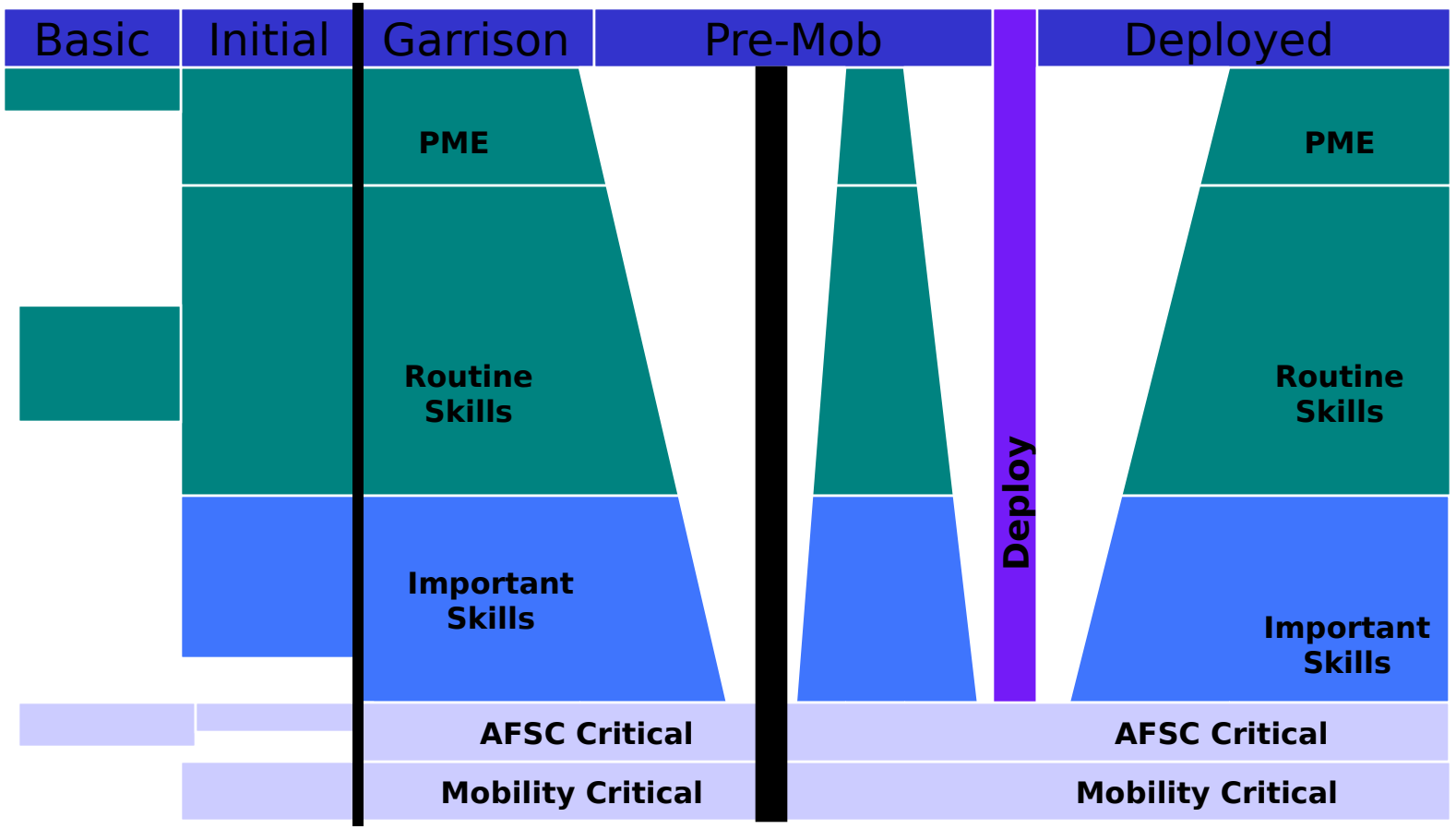
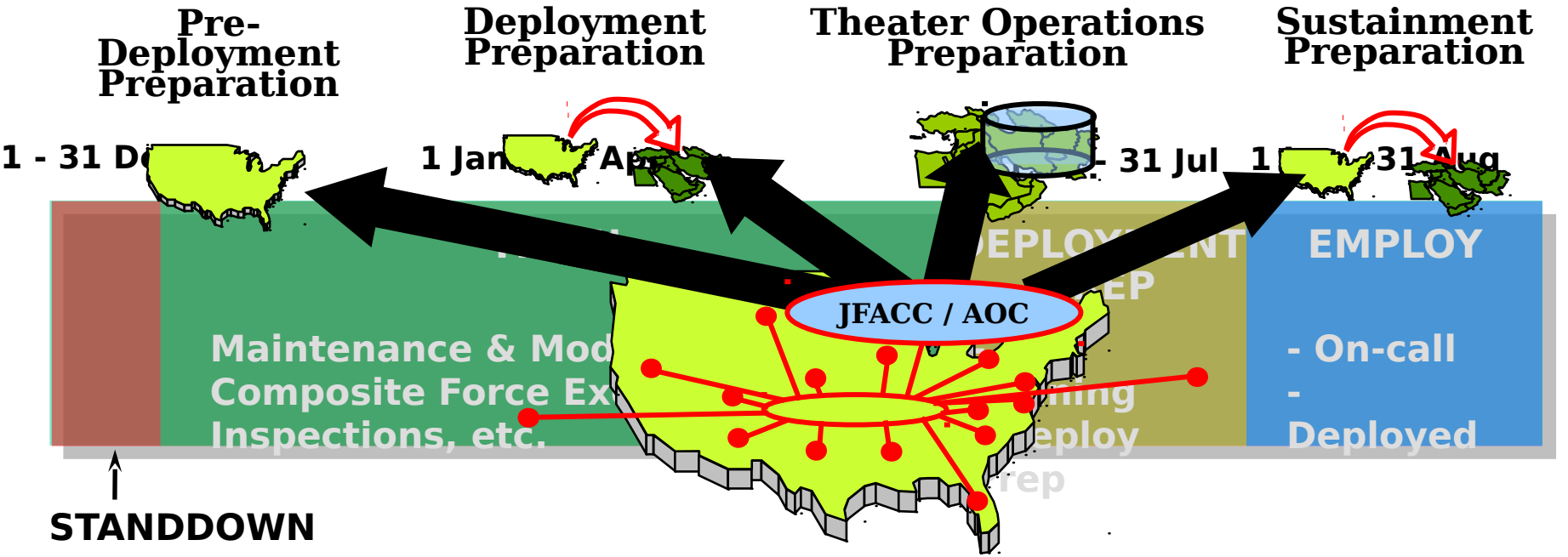
"Train to Task" Preparation



AETC **Operational AEFs**

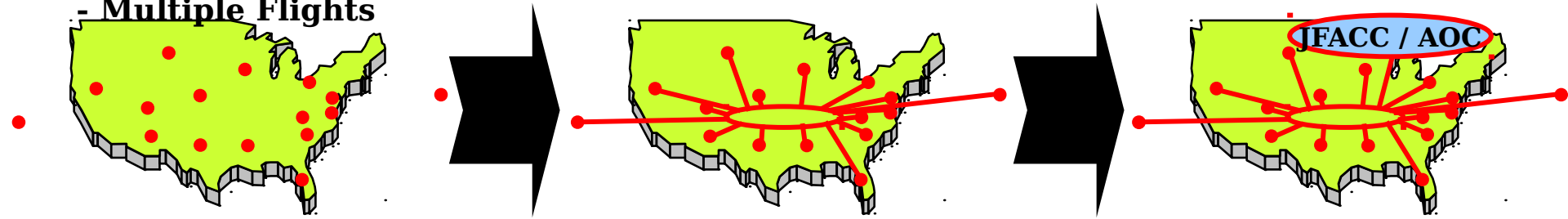
"Train to Task" Preparation



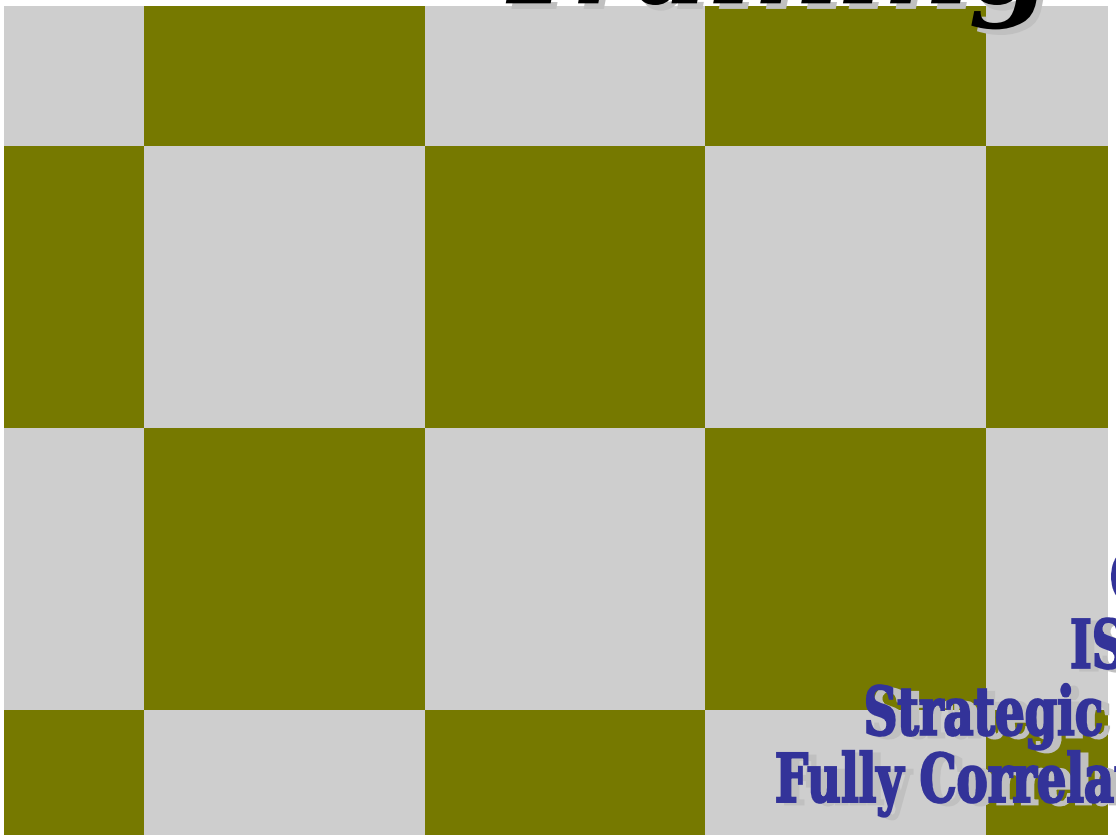
THEATER SPECIFIC INDIVIDUAL UNIT TRAINING:
- Individual Aircrew
- Single Flights
- Multiple Flights

THEATER SPECIFIC COMBINED TRAINING:
- Multiple Flights from Different Wings
- Full Mission Scenarios

THEATER SPECIFIC CAMPAIGN TRAINING:
- Full Mission Scenarios
- Specialized Theater Op



Distributed Mission Training



Capable of Integrating:

Live: Real People and Real World Equipment

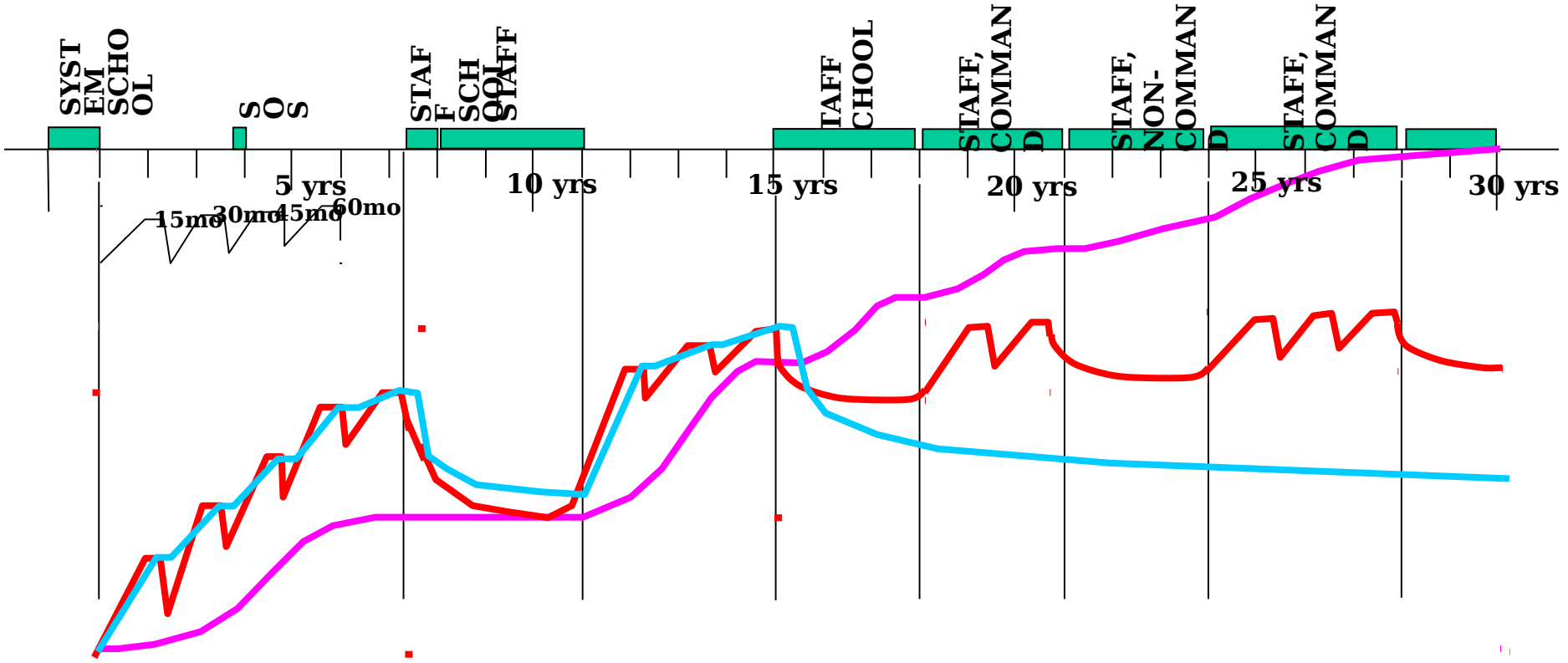
Virtual: Human-In-The-Loop Simulators (Flight, Weapons Directors, GCI Controllers, etc.)

Constructive: Computer Generated Forces (Blue, Red & Grey)

Geo-Specific Terrain
ISR Validated Threats
Strategic & Cascading Effects
Fully Correlated Representations
Weather Effects

Mission: Provide combat and combat support forces a realistic environment, capable of supporting the entire spectrum from individual training up to campaign-level mission r

Career Spanning Preparation



KNOWLEDGE:
OPERATIONAL, JOINT, ETC.

SPECIFIC SYSTEM SKILLS

TAILORED AEF CURRENCY

LIGHT

HEAVY

DMT:
INFLUENCE ON PROFESSIONAL DEVELOPMENT

DMT Integration & Training Events

- Roadrunner 98 (13-17 Jul 98)
  - Examine technical training requirements & validate research approach with real warfighters
  - Players - AFRL, TACCSF, AFIWC, 552AW, 27 OG, TBA, Iowa ANG
  - Simulators: 4xF-16, 4xF-15C WTTs, CGF, red air stations, synthetic IADS

- Coyote 98 (3-5 Nov 98)
  - Exercise emerging technologies to be leveraged for DMT and airline interoperability and constructive environments
  - Players - AFRL, TACCSF, 552AW, TBA
  - Content: RR98 Replay, STOW, COREBA, DMTITE and MCE

Distributed Mission Training Support for an Expeditionary Air Force

Moving electrons… not people

Total Force Preparation